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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/805,190	03/14/2001	Kazuyoshi Kawabe	501.39837X00	1717
20457	7590	04/28/2005	EXAMINER	
ANTONELLI, TERRY, STOUT & KRAUS, LLP 1300 NORTH SEVENTEENTH STREET SUITE 1800 ARLINGTON, VA 22209-3873			LAO, LUN YI	
			ART UNIT	PAPER NUMBER
			2673	

DATE MAILED: 04/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

11/2

Office Action Summary	Application No. 09/805,190	Applicant(s) KAWABE ET AL	
	Examiner Lao Y Lun	Art Unit 2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2004.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-14, 16 and 20-24 is/are rejected.
 7) ☒ Claim(s) 15 and 17-19 is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5 and 11-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Usui et al(5,465,102).

As to claims 1-5 and 11-14, Usui et al teach a display device comprising a display module(LCD display) and a correction circuit(51, 52)(see figure 8) for receiving a gradation signal (gray scale signal; e.g. 5 bits), generating a correction signal for correcting luminance based on an (N-1th)(previous frame) and an N-th frame(current frame) input gradation signal; correcting N-th frame input gradation signal using correction signal(output from ROMs(77, 87)) and outputting the corrected N-th frame input gradation signal to an LCD display(see figures 3, 8-9; abstract; column 5, lines 17-68; column 6, lines 1-13; column 8, lines 65-68 and column 9, lines 1-67). Usui et al teach target luminance of the corrected N-th frame(previous frame) input gradation signal overshoots or undershoots luminance of the N-th frame input gradation signal

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within one frame interval(see figures 3, 8, 21; abstract; column 5, lines 31-68 and column 6, lines 1-13).

As to claims 3-5, Usui et al teach a correction circuit(5) for decreasing a gradation level of a current image signal if the current image signal is less than the previous image signal(see figures 5-6, 8; abstract; column 5, lines 31-68 and column 6, lines 1-13).

As to claim 13, Usui et al teach a timing control circuit(11); a scan driver circuit(21, 22) and a data driver circuit(23, 24)(see figure 8 and column 8, lines 33-44).

As to claims 14, Usui et al teach correction circuit(51, 52) generated the correction signal based on the correction levels predefined in the correction data table(77, 87)(see figures 8-9 and column 10, lines 24-47).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6-10, 16 and 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Usui et al in view of Uehara et al(6,329,980).

As to claims 6-10, 16 and 20-23, Usui et al teach an LCD display having storages(73, 74, 83, 84 or 321) for storing preceding and current frame input images and a subtracter(322)(see figure 21 and column 17, lines 55-66). Usui fails to disclose an adding for adding correction signal to the current frame input gradation signal.

Uehara et al teach an add/subtracter adding and subtracting correction signal and the current frame input gradation signal(see figures 4-12 and column 9, lines 13-61). It would have been obvious to have modified Usui et al with the teaching of Uehara et al, so the current frame correction signals could be calculated instead stored in a memory and reduce the cost of a memory.

As to claim 7, Usui as modified teach the correction circuit(10) for generating a correction signal by linearizing the relationship between the correction signal and a gradation(see Uehara's figure 8(a)-8(g) and column 10, lines 9-49).

As to claims 7-8 and 22, it would have been obvious to have a compensation rate for luminance deficits in the correction signal is within -30%-10% for intermediate gradation in three-frame intervals since Usui et al teaches a display device for improve a display quality based on the difference of the luminance levels of present frame and the preceding frame(see figures 4-5; abstract; column 1, lines 48-51; column 5, lines 33-68 and column 6, lines 1-4).

As to claims 9 and 23, Usui et al teach the correction circuit comprising for edge enhancement(see figure 5 and column 5, lines 35-42).

As to claims 14 and 16, Usui et al teach a correction data table(77,87, 324)(see figures 8-9, 21; column 5, lines 52-68; column6, lines 1-4; column 17, lines 50-68 and column 18, lines 1-21).

As to claim 20-21, Uehara et al teach a correction circuit having a selection circuit(16)(see figure 10; column 11, lines 52-68 and column 12, lines 1-9).

5. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over in view of Usui et al(5,465,102) in view of Shimomura et al(5,406,305).

Usui et al fail to disclose a back-light.

Shimomura et al teach a display device comprising a back light(7)(see figure 1 and column 4, lines 4-26). It would have been obvious to have modified Usui et al with the teaching of Shimomura et al, so the display information could be viewed at night.

Allowable Subject Matter

6. Claims 15 and 17-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. Applicant's arguments filed on November 22, 2004 have been fully considered but they are not persuasive.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

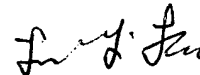
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lun-yi Lao whose telephone number is 571-272-7671. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 22, 2005



Lun-yi Lao
Primary Examiner